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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/867,803	05/31/2001	Lawrence J. Choi	1005/006	6606

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Michael N. Haynes  
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EXAMINER

PHAM, KHANH B

ART UNIT	PAPER NUMBER
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2177

DATE MAILED: 05/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/867,803

Applicant(s)

CHOI ET AL.

Examiner

Khanh B. Pham

Art Unit

2177

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 20 January 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 2 and 5-8 is/are rejected.
- 7) ☒ Claim(s) 3 and 4 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |  |
|--|--|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input checked="" type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)                        |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____   |

**DETAILED ACTION**

***Response to Amendment***

1. The amendments filed 1/20/2004 and 2/9/2004 have been entered. Claims 3-4 have been amended.

***Claim Objections***

2. Claim 3 is objected to because of the following informalities: The meaning of the phrase "the serendipity probability a measure of a probability" is unclear. The phrase should have read: "the serendipity probability **is** a measure of a probability". Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. **Claims 1-2, 5-8 are rejected under 35 U.S.C. 102(e)** as being anticipated by Fayyad et al. (US 6,633,882 B1), hereinafter "Fayyad".

**As per claims 1, 5, 6**, Fayyad teaches a computer-assisted method for evaluating a cluster assignment for an observation, comprising:

- “for each of a plurality of observations, obtaining a data set containing no more than one proxy value for each of a plurality of variables, each variable having a plurality of possible values” at Col. 5, table 1;
- “the data set also containing a cluster assignment for the observation, the cluster assignment identifying one cluster from a plurality of clusters” at Col. 5 lines 45-55;
- “for each observation from the plurality of observations, calculating a percent of proxy values for the plurality of variables that equals a mode of that observation's corresponding cluster's proxy values for the corresponding variables” at Col. 9 line 64 to Col. 10 line 25;
- “outputting the percent for each observation” at Col. 9 line 64 to Col. 10 line 25.

**As per claims 2, 7, 8,** Fayyad teaches a computer-assisted method for evaluating a cluster assignment for an observation, comprising the activities of:

- “for each of a plurality of observations, obtaining a data set containing no more than one proxy value for each of a plurality of variables, each variable having a plurality of possible values” at Col. 5, table 1,
- “the data set also containing a cluster assignment for the observation” at Col. 5 lines 45-55;
- “for each observation from the plurality of observations, estimating a purposeful probability that a particular possible value from the plurality of possible values for a particular variable will be purposefully provided by observations assigned to a

particular cluster from a plurality of clusters” at Col. 21 line 60 to Col. 22 line 18;  
and

- “outputting each purposeful probability” at Col. 22 lines 10-18.

***Allowable Subject Matter***

5. Claims 3-4 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten to overcome the claim objection set forth in section 2 of this Office action and rewritten in independent form including all of the limitations of the base claim and any intervening claims.

6. The following is a statement of reasons for the indication of allowable subject matter: prior art of record do not teach the combination of claimed element including “calculating a serendipity probability”, “calculating a ratio of the purposeful probability to the serendipity probability” and “calculating a logarithm of the ratio to obtain composition analysis score” as recited in claim 3. Prior art of record does not teach the combination of claimed elements including “assuming that before the observation can be made, the observation has an equal probability”, “assuming that the purposeful probability are true”, and “using Bayes’ Theorem to calculate a Bayes probability that a particular observation can be in each cluster conditional upon the observation’s proxy value to each variable” as recited in claim 4.

***Response to Arguments***

7. Applicant's arguments filed January 20, 2004 have been fully considered but they are not persuasive. The examiner respectfully traverses applicant's arguments.

Regarding claims 1, 5, and 6, applicant argued that Fayyad does not teach: "calculating a percent of proxy values for the plurality of variables that equals a mode of that observation's corresponding cluster's proxy value". On the contrary, Fayyad teaches the TilePercentage, which is "the number of tiles of the total number that must satisfy the accuracy criterion for the model to be judged acceptable" and "A TitleAccuracy value of 80% would mean that for a tile to be judged as accurate the number of data points falling within the tile must be above or bellow the model prediction by no more than 20%" (Col. 10 lines 5-25). In a specific example showed at Table 2, Fayyad assigned a database sample of 1000 records in to 4 clusters (or partitions) and a number of point for each cluster based on the salary attribute. Therefore the number of database records in each cluster is the "mode of that observation's corresponding cluster's proxy value" as claimed.

Regarding claims 2, 7, and 8, applicant argued that Fayyad does not teach: "estimating a purposeful probability that a particular possible value from the plurality of possible values for a particular variable will be purposefully provided". On the contrary, at Col. 22 lines 10-20, Fayyad teaches the probability for each possible value (i.e., "FullTime Sallary", "FullTime Hourly", "Contract", "Part Time") of a particular variable (i.e., "Employment Status"), reproduced below:

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Tile #1	Tile #2
FullTime Salaried (.45)	FullTime Hourly (.20) Contract (.20) Part Time (.15)
Probability = 0.45	Probability (combined) = 0.55

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In light of the foregoing arguments, the 35 U.S.C 102 rejection is hereby sustained.

### ***Conclusion***

8. The prior art made of record, listed on form PTO-892, and not relied upon, if any, is considered pertinent to applicant's disclosure.

If a reference indicated as being mailed on PTO-FORM 892 has not been enclosed in this action, please contact Lisa Craney whose telephone number is (703) 305-9601 for faster service.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Khanh B. Pham whose telephone number is (703) 308-7299. The examiner can normally be reached on Monday through Friday 7:30am to 4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John E Breene can be reached on (703) 305-9790. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Khanh B. Pham  
Examiner  
Art Unit 2177

KBP  
April 30, 2004

  
**SRI RAMA CHANNAVALUNLA**  
**PRIMARY EXAMINER**